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| FORM PTO-1449 U.S. DEPARTMENT OF COMMERCE PATENT AND TRADEMARK OFFICE INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Use several sheets if necessary) | ATTY. DOCKET NO. COG-2-0980.02.US | SERIAL NO. 10/707,588 |
| | APPLICANT Tesfai et al. | |
| | FILING DATE December 23, 2003 | GROUP 2611 |

| U.S. PATENT DOCUMENTS | | | | | | | |
|-----------------------|---|-----------------|---------|-------------------|-------|----------|-------------------------------|
| EXAMINER INITIAL | | DOCUMENT NUMBER | DATE | NAME | CLASS | SUBCLASS | FILING DATE IF APPROPRIATE |
| | | 4,121,221 | 10/1978 | Meadows | | | |
| | | 4,599,734 | 07/1986 | Yamamoto | | | |
| | | 4,639,914 | 01/1987 | Winters | | | |
| | * | 4,811,420 | 03/1989 | Avis et al. | | | |
| | | 5,274,844 | 12/1993 | Harrison et al. | | | |
| | | 5,394,435 | 02/1995 | Weerackody | | | |
| | | 5,437,055 | 07/1995 | Wheatley, III | | | |
| | | 5,457,808 | 10/1995 | Osawa et al. | | | |
| | | 5,491,723 | 02/1996 | Diepstraten | | | |
| | | 5,493,307 | 02/1996 | Tsujimoto | | | |
| | * | 5,493,722 | 02/1996 | Gunn et al. | | | |
| | | 5,507,035 | 04/1996 | Bantz et al. | | | |
| | | 5,570,366 | 10/1996 | Baker et al. | | | |
| | | 5,577,265 | 11/1996 | Wheatley, III | | | |
| | | 5,610,617 | 03/1997 | Gans et al. | | | |
| | * | 5,621,732 | 04/1997 | Osawa | | | |
| | | 5,752,173 | 05/1998 | Tsujimoto | | | |
| | | 5,761,193 | 06/1998 | Derango et al. | | | |
| | | 5,761,237 | 06/1998 | Petersen et al. | | | |
| | * | 5,771,462 | 06/1998 | Olsen | | | |
| | | 5,812,531 | 09/1998 | Cheung et al. | | | |
| | | 5,848,105 | 12/1998 | Gardner et al. | | | |
| | | 5,854,611 | 12/1998 | Gans et al. | | | |
| | | 5,898,679 | 04/1999 | Brederveld et al. | | | |
| | | 5,912,921 | 06/1999 | Warren et al. | | | |

| | |
|----------|-----------------|
| EXAMINER | DATE CONSIDERED |
|----------|-----------------|

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|--|--------------------------------------|--------------------------|
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| EXAMINER INITIAL | | DOCUMENT NUMBER | DATE | NAME | CLASS | SUBCLASS | FILING DATE IF APPROPRIATE |
|---------------------|---|-----------------|---------|-------------------|-------|----------|-------------------------------|
| | | 5,539,832 | 07/1999 | Weinstein et al. | | | |
| | | 5,924,020 | 07/1999 | Forsen et al. | | | |
| | | 5,930,248 | 07/1999 | Langlet et al. | | | |
| | | 5,982,327 | 11/1999 | Vook et al. | | | |
| | | 6,008,760 | 12/1999 | Shattil | | | |
| | * | 6,018,642 | 01/2000 | Adachi | | | |
| | | 6,037,898 | 03/2000 | Parish et al. | | | |
| | | 6,038,272 | 03/2000 | Golden | | | |
| | | 6,044,120 | 03/2000 | Bar-David et al. | | | |
| | | 6,058,105 | 05/2000 | Hochwald et al. | | | |
| | * | 6,064,338 | 05/2000 | Kobayakawa et al. | | | |
| | | 6,091,934 | 07/2000 | Berman et al. | | | |
| | | 6,097,771 | 08/2000 | Foschini | | | |
| | | 6,118,788 | 09/2000 | Kermani | | | |
| | | 6,122,260 | 09/2000 | Liu et al. | | | |
| | | 6,124,824 | 09/2000 | Xu et al. | | | |
| | | 6,141,393 | 10/2000 | Thomas et al. | | | |
| | | 6,141,567 | 10/2000 | Youssefmir et al. | | | |
| | | 6,144,651 | 11/2000 | Rinchiuso et al. | | | |
| | | 6,144,711 | 11/2000 | Raleigh et al. | | | |
| | | 6,147,985 | 11/2000 | Bar-David et al. | | | |
| | | 6,157,340 | 12/2000 | Xu et al. | | | |
| | | 6,157,843 | 12/2000 | Derango et al. | | | |
| | | 6,177,906 | 01/2001 | Petrus | | | |
| | | 6,185,440 | 02/2001 | Barratt et al. | | | |
| | | 6,195,045 | 02/2001 | Xu et al. | | | |

| | |
|----------|-----------------|
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|----------|-----------------|

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|---------------------|---|-----------------|---------|------------------------|-------|----------|-------------------------------|
| | | 6,211,671 | 04/2001 | Shattil | | | |
| | * | 6,218,986 | 04/2001 | Yukitomo et al. | | | |
| | | 6,252,548 | 06/2001 | Jeon | | | |
| | | 6,252,884 | 06/2001 | Hunter | | | |
| | | 6,266,528 | 07/2001 | Farzaneh | | | |
| | | 6,295,026 | 09/2001 | Chen et al. | | | |
| | | 6,298,092 | 10/2001 | Heath, Jr. | | | |
| | | 6,307,882 | 10/2001 | Marzetta | | | |
| | | 6,317,466 | 11/2001 | Foschini et al. | | | |
| | | 6,327,310 | 12/2001 | Hochwald et al. | | | |
| | | 6,331,837 | 12/2001 | Shattil | | | |
| | | 6,023,625 | 02/2002 | Myers Jr. | | | |
| | | 6,349,219 | 02/2002 | Hochwald et al. | | | |
| | | 6,351,499 | 02/2002 | Paulraj et al. | | | |
| | | 6,362,781 | 03/2002 | Thomas et al. | | | |
| | | 6,369,758 | 04/2002 | Zhang | | | |
| | | 6,370,182 | 04/2002 | Bierly et al. | | | |
| | | 6,377,631 | 04/2002 | Raleigh | | | |
| | | 6,377,636 | 04/2002 | Paulraj et al. | | | |
| | | 6,377,819 | 04/2002 | Gesbert et al. | | | |
| | | 6,400,699 | 06/2002 | Airy et al. | | | |
| | | 6,400,780 | 06/2002 | Rashid-Farrokhi et al. | | | |
| | | 6,442,214 | 08/2002 | Boleskei et al. | | | |
| | | 6,462,709 | 10/2002 | Choi | | | |
| | | 6,463,295 | 10/2002 | Yun | | | |
| | | 6,473,467 | 10/2002 | Wallace et al. | | | |

| | |
|----------|-----------------|
| EXAMINER | DATE CONSIDERED |
|----------|-----------------|

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|---------------------|---|-----------------|---------|-------------------|-------|----------|-------------------------------|
| | | 6,522,898 | 02/2003 | Kohno et al. | | | |
| | | 6,549,786 | 04/2003 | Cheung | | | |
| | | 6,570,929 | 05/2003 | Eriksson | | | |
| | | 6,584,161 | 06/2003 | Hottinen | | | |
| | * | 6,625,162 | 09/2003 | Myojo et al. | | | |
| | | 6,636,568 | 10/2003 | Kadous | | | |
| | | 6,646,600 | 11/2003 | Vail et al. | | | |
| | | 6,684,064 | 01/2004 | Kazakevich et al. | | | |
| | | 6,687,492 | 02/2004 | Sugar et al. | | | |
| | * | 6,728,294 | 04/2004 | Kohno et al. | | | |
| | | 6,728,517 | 04/2004 | Sugar et al. | | | |
| | * | 6,792,033 | 09/2004 | Maruta et al. | | | |
| | | 6,862,271 | 03/2005 | Medvedev et al. | | | |
| | | 6,873,606 | 03/2005 | Agrawal et al. | | | |
| | | 6,873,651 | 03/2005 | Tesfai et al. | | | |
| | * | 6,888,878 | 05/2005 | Prysby et al. | | | |
| | * | 6,895,255 | 05/2005 | Bridgelall | | | |
| | | 6,901,122 | 05/2005 | Nadgauda et al. | | | |
| | * | 6,904,021 | 06/2005 | Belcea | | | |
| | | 6,940,917 | 09/2005 | Menon et al. | | | |
| | | 6,956,907 | 10/2005 | Ketchum, John W. | | | |
| | * | 6,961,545 | 11/2005 | Tehrani et al. | | | |
| | * | 6,970,682 | 11/2005 | Crilly et al. | | | |
| | | 6,980,600 | 12/2005 | Ratnarajah | | | |
| | * | 6,983,167 | 01/2006 | Adachi et al. | | | |
| | * | 7,031,368 | 04/2006 | Maruta et al. | | | |

| | |
|----------|-----------------|
| EXAMINER | DATE CONSIDERED |
|----------|-----------------|

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| EXAMINER INITIAL | | DOCUMENT NUMBER | DATE | NAME | CLASS | SUBCLASS | FILING DATE IF APPROPRIATE |
|---------------------|---|-----------------|---------|------------------|-------|----------|-------------------------------|
| | * | 7,042,860 | 05/2006 | Kasami et al. | | | |
| | * | 7,230,940 | 06/2007 | Fantaske | | | |
| | * | 7,277,409 | 10/2007 | Thermond et al. | | | |
| | * | 7,340,279 | 03/2008 | Chen et al. | | | |
| | | 7,342,875 | 03/2008 | Hammons et al. | | | |
| | | 2001/0012764 | 08/2001 | Edwards et al. | | | |
| | | 2001/0015994 | 08/2001 | Nam | | | |
| | | 2001/0046255 | 11/2001 | Shattil | | | |
| | | 2001/0053143 | 12/2001 | Li et al. | | | |
| | * | 2001/0053699 | 12/2001 | McCrary et al. | | | |
| | | 2002/0001316 | 01/2002 | Hornsby et al. | | | |
| | | 2002/0024975 | 02/2002 | Hendler | | | |
| | | 2002/0034191 | 03/2002 | Shattil | | | |
| | | 2002/0039884 | 04/2002 | Raynes et al. | | | |
| | | 2002/0045435 | 04/2002 | Fantaske | | | |
| | * | 2002/0051430 | 05/2002 | Kasami et al. | | | |
| | | 2002/0064246 | 05/2002 | Kelkar et al. | | | |
| | | 2002/0067309 | 06/2002 | Baker et al. | | | |
| | | 2002/0072392 | 06/2002 | Awater et al. | | | |
| | | 2002/0085643 | 07/2002 | Kitchener et al. | | | |
| | | 2002/0102950 | 08/2002 | Gore et al. | | | |
| | | 2002/0111142 | 08/2002 | Klimovitch | | | |
| | | 2002/0118781 | 08/2002 | Thomas et al. | | | |
| | | 2002/0122383 | 09/2002 | Wu et al. | | | |
| | | 2002/0122501 | 09/2002 | Awater et al. | | | |
| | | 2002/0127978 | 09/2002 | Khatri | | | |

| | |
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|---------------------|---|-----------------|---------|--------------------|-------|----------|-------------------------------|
| | | 2002/0136170 | 09/2002 | Struhsaker | | | |
| | | 2002/0141355 | 10/2002 | Struhsaker et al. | | | |
| | | 2002/0147032 | 10/2002 | Yoon et al. | | | |
| | | 2002/0158801 | 10/2002 | Crilly, Jr. et al. | | | |
| | | 2002/0159537 | 10/2002 | Crilly, Jr. | | | |
| | | 2002/0172186 | 11/2002 | Larsson | | | |
| | | 2002/0172269 | 11/2002 | Xu | | | |
| | | 2002/0196842 | 12/2002 | Onggosanusi et al. | | | |
| | | 2003/0002450 | 01/2003 | Jalali et al. | | | |
| | | 2003/0022693 | 01/2003 | Gerogiokas et al. | | | |
| | | 2003/0032423 | 02/2003 | Boros et al. | | | |
| | | 2003/0048761 | 03/2003 | Jarett | | | |
| | | 2003/0108117 | 06/2003 | Ketchum et al. | | | |
| | | 2003/0114108 | 06/2003 | Frecassetti et al. | | | |
| | | 2003/0125090 | 07/2003 | Zeira | | | |
| | | 2003/0139194 | 07/2003 | Onggosanusi et al. | | | |
| | | 2003/0157954 | 08/2003 | Medvedev et al. | | | |
| | | 2003/0181165 | 09/2003 | Sugar et al. | | | |
| | | 2004/0072546 | 04/2004 | Sugar et al. | | | |
| | | 2004/0104839 | 06/2004 | Valazquez et al. | | | |
| | * | 2005/0192048 | 09/2005 | Bridgeall | | | |
| | * | 2007/0117513 | 05/2007 | Kasami et al. | | | |

FOREIGN PATENT DOCUMENTS

| EXAMINER INITIAL | | DOCUMENT NUMBER | DATE | COUNTRY | CLASS | SUBCLASS | TRANSLATION | |
|---------------------|--|-----------------|---------|---------|-------|----------|-------------|----|
| | | | | | | | YES | NO |
| | | 01/45300 | 06/2001 | WO | | | | |

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|---------------------|-----------------|---------|---------|-------|----------|-------------|----|
| | | | | | | YES | NO |
| | 02/03568 | 01/2002 | WO | | | | |

OTHER DOCUMENTS

| EXAMINER INITIAL | DESCRIPTION (Including Author, Title, Date, Pertinent Pages, Etc.) |
|---------------------|--|
| | "BLAST High-Level Overview", Lucent Technologies, July 18, 2000. |
| | "Lucent's 'BLAST' Chips to Take Off in Wireless Market", EETimes.com, October 16, 2002. |
| | Ariyavisitakul et al., "Optimum Space-Time Processors With Dispersive Interference – Unified Analysis And Required Filter Span", 1999 IEEE International Conference On Communications, Vol. 2, pp. 1244-1249, (1999). |
| | Aziz et al., "Indoor Throughput and Range Improvements Using Standard Complaint AP Antenna Diversity in IEEE 802.11a and ETSI HIPERLAN/2", Vehicular Technology Conference, 2002, VTC 2001, October 7-11, 2001, IEEE VTS 54 th , Vol. 4, pp. 2294-2298. |
| | Bablan et al., "Optimum Diversity Combining and Equalization in Digital Data Transmission with Applications to Cellular Mobile Radio-Part II: Numerical Results"; May 1992; IEEE Transactions on Communications, vol. 30, No. 5; pp. 895-907. |
| | Briesemeister et al., "Role-Based Multicast in Highly Mobile but Sparsely Connect Ad-Hoc Networks"; First Annual Workshop on Mobile Ad Hoc Networking & Computing; pp. 45-50; August 2000. |
| | Brunner et al., "Downlink Beamforming for WCDMA Based on Uplink Channel Parameters"; Proceedings of 3 rd European Personal Mobile Conference (EPMCC '99), March 1999, pp. 375-380. |
| | Chiu et al., "OFDM Receiver Design", EE225C, Fall 2000, University of California, Berkeley. |
| | Chizhik et al., "Keyholes, Correlations, and Capacities of Multielement Transmit and Receiver Antennas", IEEE Transactions on Wireless Communications, Vol. 1, No. 2, April 2002, pp. 361-368. |
| | Choi et al., "MISO CDMA Transmission with Simplified Receiver for Wireless Communication Handsets", IEEE Transactions on Communications, Vol. 49, No. 5, May 2002. |

| | |
|----------|-----------------|
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|----------|-----------------|

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| EXAMINER INITIAL | | DESCRIPTION (Including Author, Title, Date, Pertinent Pages, Etc.) |
|---------------------|--|--|
| | | Chuah et al., "Capacity of Multi-Antenna Array Systems in Indoor Wireless Environment", November 1998, IEEE Globecom. |
| | | Golden et al., "Detection Algorithm and Initial Laboratory Results Using V-BLAST Space-Time Communication Architecture", Electronic Letters, January 7, 1999, Vol. 35, No. 1. |
| | | Golden et al., "V-BLAST: A High Capacity Space-Time Architecture for the Rich-Scattering Wireless Channel", Bell Laboratories, Lucent Technologies, Proc. Int'l Symposium on Advanced Radio Technologies, Boulder, CO, September 10, 1998. |
| | | Golub et al., <u>Matrix Computation</u> , "7.3 Power Iterations", The Johns Hopkins University Press, Second Edition, pp. 351, (1983). |
| | | Heath et al., "A Simple Scheme for Transmit Diversity Using Partial Channel Feedback", Signals, Systems & Computers, Conference Record of the Thirty-Second Asilomar Conference, November 1-4, 1998; vol. 2; pp. 1073-1078. |
| | | Irmer et al., "MISO Concepts for Frequency-Selective Channels", 2002 International Zurich Seminar on Broadband Communications Access, February 19-21, 2002. |
| | | Iserste et al., "Iterative Algorithm for the Estimation of Distributed Sources Localization Parameters", SSP 2001, 11 th IEEE Workshop on Statistical Signal Processing, August 2001. |
| | | Iserste et al., "Joint Beamforming Strategies in OFDM-MIMO Systems", ICASSP 2002, IEEE International Conference on Acoustics, Speech and Signal Processing, May 2002. |
| | | Iserste et al., "Pre-and Post-Beamforming in MIMO Channels Applied to HIPERLAN/2 and OFDM", IST Summit 2001, IST Mobile Communications Summit, September 2001. |
| | | Ivrlac et al., "On Channel Capacity of Correlated MIMO Channels", ITG Fokusprojekt: Mobilkommunikation "Systeme mit Intelligenten Antennen", Ilmenau, 2001. |
| | | Jakes, "Microwave Mobile Communications", Copyright 1974, pp. 313-320 and pp. 489-498. |
| | | Jungnickel et al., "A MIMO WLAN Based on Linear Channel Inversion", IEE Seminar-MIMO Communication Systems from Concept TO Implementation, December 2001, pp. 20/1-20/6. |

| | |
|----------|-----------------|
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|----------|-----------------|

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| EXAMINER INITIAL | | DESCRIPTION (Including Author, Title, Date, Pertinent Pages, Etc.) |
|---------------------|--|---|
| | | Jungnickel et al., "Performance of a MIMO System with Overlay Pilots", IEEE GlobeCom 2001, pp. 594-598. |
| | | Junqiang et al., "Spatial Multiuser Access with MIMO Smart Antennas for OFDM Systems", IEEE VTC 2001, September 2001, pp. 1553-1557. |
| | | LAN MAN Standards Committee Of The IEEE Computer Society, "Information Technology – Telecommunications And Information Exchange Between Systems – Local And Metropolitan Area Networks – Specific Requirements – Part 11: Wireless LAN Medium Access Control (MAC) And Physical Layer (PHY) Specifications", ANSI/IEEE Std 802.11, 1999 Edition (R2003), (Reaffirmed 12 June 2003). |
| | | Lee et al., "Antenna Diversity for an OFDM System in a Fading Channel", Proceeding of IEEE MILCOM 1999, November 1999, pp. 1104-1109. |
| | | Li et al., "Adaptive Antenna Arrays For OFDM Systems With Cochannel Interference", IEEE Transactions On Communications, Vol. 47, No. 2, pp. 217-229, (February 1999). |
| | | Love et al., "Equal Gain Transmission in Multiple-Input Multiple-Output Wireless Systems", November 2002, Proceedings of IEEE Globecom, pp. 1124-1128. |
| | | Lucent Technologies, "Lucent Technologies: Chips Poised to Bring 'BLAST' Multiple Input/Multiple Output Technology to Laptops, PDAs and Other Mobile Devices", October 16, 2002, lucent.com. |
| | | Meyer-Ottens, et al. "Downlink Beamforming for W-CDMA Using Feedback and Interference Estimate", March 9, 2001. |
| | | Morgan, "Interaction of Adaptive Antenna Arrays in an Arbitrary Environment", The Bell System Technical Journal, January 1965, pp. 23-47. |
| | | Narula et al., "Efficient Use Of Side Information In Multiple-Antenna Data Transmission Over Fading Channels", IEEE Journal On Selected Areas In Communications, Vol. 16, No. 8, pp. 1423-1436, (October 1998). |
| | | Onggosanusi et al., "Performance Analysis Of Closed-Loop Transmit Diversity In The Presence Of Feedback Delay", IEEE Transactions On Communications, Vol. 49, No. 9, pp. 1618-1630, (September 2001). |
| | | Raleigh et al., "Spatio-Temporal Coding for Wireless Communication", IEEE Transactions on Communications, Vol. 46, No. 3, March 1998, pp. 357-366. |

| | |
|----------|-----------------|
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| | Sanchez et al., "CSMA/CA Beam Forming Antennas in Multi-hop Packet Radio"; Proc. For Swedish Workshop on Wireless Ad-Hoc Networks, March 5-6, 2001. |
| | Stridh et al., "MIMO Channel Capacity on a Measured Indoor Radio Channel at 5.8 GHz", Proc. of the Asilomar Conf. on Signals, Systems & Computers, Vol. 1, October 2000, pp. 733-737. |
| | Stridh et al., "Spatial Characterization of Indoor Radio Channel Measurements at 5 GHz", SAM 2000, March 2000, pp. 58-62. |
| | Vaidyanathan et al., "The Role In Lossless Systems in Modern Digital Signal Processing: A Tutorial", IEEE Transactions on Education, Vol. 32, August 1989, pp. 181-197. |
| | Wallace et al., "Experimental Characterization of the MIMO Wireless Channel: Data Acquisition and Analysis", February 27, 2002, Department of Electrical and Computer Engineering, Brigham Young University. |
| | Wennström et al., "On The Optimality And Performance Of Transmit And Receive Space Diversity In MIMO Channels", IEEE Seminar on Communications Systems from Concept to Implementations, (December 12, 2001). |
| | Wolniansky et al., "V-BLAST: An Architecture for Realizing Very High Data Rates Over the Rich-Scattering Wireless Channel", Proc. ISSSE-98, Pisa, Italy, September 29, 1998. |
| | Yang et al., "Joint Transmitter – Receiver Optimization For Multi-Input Multi-Output Systems With Decision Feedback", IEEE Transactions On Information Theory, Vol. 40, No. 5, pp. 1334-1347, (September 1994). |
| | Yang et al., "On Joint Transmitter and Receive Optimization for Multiple-Input-Multiple-Output (MIMO) Transmission Systems", IEEE Transactions on Communications, Vol. 42, No. 12, December 1994. |
| | Yeh, "An Analysis of Adaptive Retransmission Arrays in a Fading Environment", The Bell System Technical Journal, October 1970, pp. 1811-1825. |

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| EXAMINER | DATE CONSIDERED |
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EXAMINER: Initial if citation considered, whether or not citation is in conformance with MPEP 609; Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.